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Gates et al.

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[54] **COMPUTER ASSISTED VIDEO SURVEYING AND METHOD THEREOF**

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[58] **Field of Search** 358/107, 101, 109; 356/397; 364/517, 518, 560

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[57] **ABSTRACT**

One embodiment of the invention is a method of using a computer to assist a land based video survey. Initially, a video recording of a control location and a survey area is produced. The control location video includes at least a view of a baseline scale. Further, camera position data associated with the control location must be noted or stored in some manner. The computer converts the baseline scale from the control location video image to a video image scale. A survey video frame image of interest is selected and is displayed. One or more points of interest on the survey video frame is identified along with a predetermined baseline point obtained from a baseline scale image view overlaid on the survey video frame. In one embodiment, this identification step is conducted manually by an operator touching a touch sensitive pad having fine grid lines corresponding to pixel points in the video frame image. The distance between two identified points is calculated based upon the video image scale and the camera position data. An aerial survey is also disclosed wherein two video frames are selected and limited to different color bandwidths. Reference points are aligned by combining the two frames. Elevations are mapped based upon the spatial separation of images in the two frames.

20 Claims, 7 Drawing Sheets